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EXAMINER

NGUYEN, LOAN B

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,687

Applicant(s)

HUANG ET AL.

Examiner

Loan B Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☒ Claim(s) 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-58 are presented for examination.

Claim Objections

2. Claim 40 is objected to because of the following informalities: the computer program product is dependent on the claim 19, which is a computer method. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 7-12, 15-22, 27-32, 35-42, 47-52, and 55-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Deianov et al. (6529985) (hereinafter Deianov et al.).
5. As per claim 1, Deianov et al. teaches method for virtualizing super-user privileges in a computer operating system including multiple virtual processes, the method comprising:
designating a plurality of virtual super-users, each virtual super-user being associated with a separate virtual process (e.g. col. 3 line 65-67);

intercepting a system call for which actual super-user privileges are required (e.g. col. 4 line 5-10);

in response to the intercepted system call being made by a virtual super-user and

pertaining to the virtual process of the virtual super-user (e.g. col. 4 line 10);

granting actual super-user privileges to the virtual super-user (e.g. col. 4 line 42-45); and

allowing execution of the system call (e.g. col. 4 line 30).

6. As per claims 21 and 41 are rejected for similar reasons as stated above.

7. As per claim 2, Deianov et al. teaches method of claim 1, further comprising:
withdrawing the actual super-user privileges from the virtual super-user after execution of the system call (e.g. col. 4 line 42-45).

8. As per claims 22 and 42 are rejected for similar reasons as stated above.

9. As per claim 7, Deianov et al. teaches method of claim 1, wherein the intercepted system call comprises

a system call for accessing a file (e.g. col. 1 line 34-40 and col. 6 line 46-58).

10. As per claims 27 and 47 are rejected for similar reasons as stated above.

11. As per claim 8, Deianov et al. teaches method of claim 7, wherein the intercepted system call pertains to the virtual process of the virtual super-user when the file to be accessed is associated with the same virtual process (e.g. col. 6 line 59-66).

12. As per claims 28 and 48 are rejected for similar reasons as stated above.

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13. As per claim 9, Deianov et al. teaches method of claim 1, wherein the intercepted system call comprises a system call for terminating a process (e.g. col. 6 line 27-36 and col. 12 line 51-53).

14. As per claims 29 and 49 are rejected for similar reasons as stated above.

15. As per claim 10, Deianov et al. teaches method of claim 9, wherein the intercepted system call pertains to the virtual process of the virtual super-user when the process to be terminated is associated with the same virtual process (e.g. col. 8 line 29-38).

16. As per claims 30 and 50 are rejected for similar reasons as stated above.

17. As per claim 11, Deianov et al. teaches method of claim 1, wherein the intercepted system call comprises a system call for terminating all processes associated with a virtual process, the method further comprising:

identifying each process associated with the virtual process and terminating each identified process (e.g. col. 8 line 12-28).

18. As per claims 31 and 51 are rejected for similar reasons as stated above.

19. As per claim 12, Deianov et al. teaches method of claim 11, wherein an association data structure stores associations between processes and virtual processes, and wherein identifying comprises:

identifying each process by its association with the virtual process in the association data structure (e.g. col. 7 line 24-25).

20. As per claims 32 and 52 are rejected for similar reasons as stated above.

21. As per claim 15, Deianov et al. teaches method of claim 1, further comprising:
responsive to the intercepted system call not being made by a virtual super-user,
disallowing execution of the system call (e.g. col. 12 line 21-28).
22. As per claims 35 and 55 are rejected for similar reasons as stated above.
23. As per claim 16, Deianov et al. teaches method of claim 1, further comprising:
responsive to the intercepted system call being made by a virtual super-user and not
pertaining to the virtual process of the virtual super-user, disallowing execution of the system
call (e.g. col. 12 line 21-28).
24. As per claims 36 and 56 are rejected for similar reasons as stated above.
25. As per claim 17, Deianov et al. teaches method of claim 1, further comprising:
responsive to the intercepted system call comprising a system call for inserting a module
into an operating system kernel, disallowing execution of the system call (e.g. col. 11 line 55-60
and col. 12 line 31-33).
26. As per claims 37 and 57 are rejected for similar reasons as stated above.
27. As per claim 18, Deianov et al. teaches method of claim 1, wherein allowing comprises:
executing the system call (e.g. col. 12 line 39).
28. As per claims 38 and 58 are rejected for similar reasons as stated above.
29. As per claim 19, Deianov et al. teaches method of claim 1, wherein intercepting a system
call comprises:
loading a system call wrapper, (e.g. col. 10 line 28-30 and line 42 and col. 11 line 60);

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saving a pointer to the system call (e.g. col. 10 line 31-32 and col. 11 line 61-64); and replacing the pointer to the system call with a pointer to the system call wrapper, such that the system call wrapper is executed when the system call is invoked (e.g. col. 10 line 33 and col. 11 line 7-9).

30. As per claim 39 is rejected for similar reasons as stated above.

31. As per claim 20, Deianov et al. teaches method of claim 19, wherein the pointer to the first system call comprises a system call vector (e.g. col. 6 line 5-15).

32. As per claim 40 is rejected for similar reasons as stated above

Claim Rejections - 35 USC § 103

33. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. Claims 3-6, 13-14, 23-26, 33-34, 43-46 and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deianov et al. (6529985) (hereinafter Deianov et al.) in view of Ault et al. (5764889) (hereinafter Ault et al.).

35. As per claim 3, Deianov et al. does not specifically teach a method of assigning a virtual super-user identifier to each virtual super-user as recited in claim 3. Ault et al. teaches a method to assign a virtual super-user identifier to each virtual super-user (e.g. col. 5 line 40-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Deianov et al. with Ault et al. because it would accomplish to issue a virtual super user ID to each virtual super user from the user task process request from the client/server system so that would give the privileges to the authorized user and create a security environment system.

36. As per claims 6, 23, 26, 43, and 46 are rejected for similar reasons as stated above.

37. As per claim 4, Deianov et al. does not specifically teach a method of each virtual super-user identifier comprises a super-user identifier and an indication of a virtual process. Ault et al. teaches a method to each virtual super-user identifier comprises a super-user identifier and an indication of a virtual process (e.g. col. 4 line 66-67 and col. 5 line 8-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Deianov et al. with Ault et al. because it would show the relationship between the specific user identifier and its requested task to be proceed; therefore, it would accomplish to establish each virtual super user identifier and indication of the process from the operating system.

38. As per claims 24 and 44 are rejected for similar reasons as stated above.

39. As per claim 5, Deianov et al. does not specifically teach a method of assigning and storing a user identifier as recited in claim 5. Ault et al. teaches a method of assigning a user identifier to a virtual super user and storing the user identifier and an indication of the virtual process of the virtual super-user in a virtual super-user list (e.g. col. 3 line 54-62 and line 28-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Deianov et al. with Ault et al. because it would accomplish to create a new user ID storing the user ID from the user task request process in the security database.

40. As per claims 25 and 45 are rejected for similar reasons as stated above.

41. As per claim 13, Deianov et al. does not specifically teach a method of claim 1, wherein the system call is made by a virtual super user when a user making the call has a virtual super-user identifier. Ault et al. teaches a method of the system call is made by a virtual super-user when a user making the call has a virtual super-user identifier (e.g. col. 4 line 46-50 and col. 5 line 15-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Deianov et al. with Ault et al. because it would create a security environment for a user request task process and operates as a super user, so that it would accomplish to process a system call is made by super user request when the call having super user ID from the user task request process.

42. As per claims 33 and 53 are rejected for similar reasons as stated above.

43. As per claim 14, Deianov et al. does not specifically teach a method of claim 1, wherein the system call is made by a virtual super user when a user making the call has user identifier in a virtual super-user list. Ault et al. teaches a method of the system call is made by a virtual super user when a user making the call has user identifier in a virtual super-user list (e.g. col. 5 line 10-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Deianov et al. with Ault et al. because the system call would cause a kernel spawn routine to create a new process for each task request; once it completes the task, it would execute and issue a next process in the list; thus it would accomplish to process a system call is made from the super user list from the user task request process.

44. As per claims 34 and 54 are rejected for similar reasons as stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Loan B Nguyen whose telephone number is (703) 305-0358. The examiner can normally be reached on 8:00AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Loan B. Nguyen
September 11, 2003



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